

IN THE CLAIMS:

The following listing reflects the current version of all claims, and replaces all earlier versions and listings:

Claim 1. (Currently Amended) A solid state image pickup apparatus comprising

a photodetecting device and one or more thin film transistors connected to said photodetecting device ~~are~~ formed in one pixel, wherein a part of said photodetecting device is formed over at least a part of said thin film transistor, and

wherein said thin film transistor comprises a source electrode, a drain electrode, a first gate electrode, and a second gate electrode arranged on the side opposite to said first gate electrode with respect to the source electrode and the drain electrode.

Claim 2. (Currently Amended) A solid state image pickup apparatus according to claim 1, wherein

said thin film transistor is a double gate type thin film transistor comprising at least ~~the~~ said first gate electrode, an insulating layer, a semiconductor layer, a semiconductor layer having an impurity doped, ~~the~~ said source and drain electrodes, an insulating layer, and ~~the~~ said second gate electrode which are sequentially formed onto an insulating substrate.

Claim 3. (Currently Amended) A solid state image pickup apparatus according to claim 1 or 2, wherein

said second gate electrode covers at least a part of a gap portion between said source electrode and said drain electrode.

Claim 4. (Currently Amended) A solid state image pickup apparatus according to any one of claims 1 to 3 2, wherein

either said source electrode or said drain electrode is connected to a transfer wiring connected to a signal processing circuit, and said second gate electrode does not two-dimensionally overlap either the source electrode or the drain electrode connected to ~~said~~ the transfer wiring.

Claim 5. (Currently Amended) A solid state image pickup apparatus according to any one of claims 1 to 4 2, wherein

said second gate electrode and said first gate electrode are connected to one gate driver circuit by a gate wiring and controlled by ~~said~~ the gate driver circuit.

Claim 6. (Currently Amended) A solid state image pickup apparatus according to any one of claims 1 to 5 2, wherein

said second gate electrode is formed as a film simultaneously with an electrode material constructing ~~the~~ said photodetecting device.

Claim 7. (Currently Amended) A solid state image pickup apparatus according to any one of claims 1 to 6 2, wherein  
said photodetecting device is constructed by at least an insulating layer, a semiconductor layer, and a semiconductor layer having an impurity doped c.

Claim 8. (Currently Amended) A solid state image pickup apparatus according to any one of claims 1 to 6 2, wherein  
said photodetecting device is constructed by at least a first semiconductor layer having an impurity doped, a semiconductor layer, and a second semiconductor layer having an impurity doped of a conductivity type opposite to that of said first semiconductor layer having a impurity doped.

Claim 9. (Currently Amended) A radiation image pickup apparatus wherein  
said photodetecting device of the solid state image pickup apparatus according to any one of claims 1 to 6 2 is a radiation detecting device for directly and photoelectrically converting a radiation.

Claim 10. (Currently Amended) A radiation image pickup apparatus wherein  
a wavelength converter is arranged onto said photodetecting device of the solid state image pickup apparatus according to any one of claims 1 to 8 2.